

example, should be based on a tactical advantage to be gained by doing so, not on a problem such as an inability to boresight and zero with it. Too, the issues associated with the "whiting out" of these devices are real and must be dealt with. A crew that elects to remove the NOD from their weapon should always have a well rehearsed range card and a means of target acquisition and fire adjustment.

On the other hand, a decision to fire with NODs presents a fire control challenge. Such fire control measures as trigger lines, TRPs, FPLs, PDFs, and FPFs must be marked so that they can be identified.

TRPs should be both thermal and visual so that all systems can use them. Trigger lines should be marked according to a color scheme for different distances and different systems. Final protective lines can be marked with chemical lights to the front of the position, or with some chemical liquid from a light on the horizontal and vertical bars of the weapons' traversing and elevating mechanisms. PDFs and the trigger line for the FPF can also be marked using chemical lights.

There are many other techniques for fire control during limited visibility operations, but a leader must always use discretion in placing these lights. His plan must be simple and usable, and

whenever possible, he should get a look at the engagement area from the enemy's vantage point. Rehearsal is the key to understanding the limited visibility fire plan, including shifting fires between marked TRPs and repositioning forces as necessary.

In fact, rehearsals are absolutely necessary to the successful execution of any fire plan, but time is often the adversary. When possible, rehearsals should be conducted with all personnel involved. Various levels of rehearsal can be conducted, depending upon the factors of METT-T.

- A full rehearsal is conducted with all soldiers in a secure area going over specific tasks. Actions on the objective should be rehearsed first (based on reconnaissance) then specific company, team, and platoon drills.

- A key leader rehearsal is a walk-through version of full rehearsal by key leaders.

- A terrain model rehearsal reconstructs key events on a terrain model.

- A fire plan rehearsal uses a fire plan board and terrain model on which key leaders rehearse actions to be taken as the enemy crosses specific trigger lines.

- A range card rehearsal is one in which the squad leaders go over the range card with their gunners and assistant gunners (a transition exercise, for example).

- A backbrief is used by leaders to explain their actions using maps or fire plan boards to the soldiers.

To summarize, leaders must be able to analyze OCOKA in relation to METT-T and design a fire plan that considers the weapon systems available and the enemy's order of battle. Gunners must understand how to control the rate and distribution of fires (fire patterns and firing techniques). Since everyone must understand the fire commands, they must be brief and simple. And, if leaders and gunners are to initiate direct fires according to the proper trigger line, they absolutely must rehearse the fire plan.

But units will continue to have problems defining the "how to" until ARTEP 7-8 MTP includes a check list that leaders can use to guide them through the process.

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Offensive TOW Training

An Innovative Approach

CAPTAIN R.W. CHATHAM, JR.

The Echo Company in a mechanized infantry battalion is the support arm of a battalion task force. It enables the maneuver infantry battalion commander to make the most of his combat power. By fixing enemy forces at long ranges,

the Echo Company increases the concentration of assault forces directed at an enemy's center of gravity. Why, then, do after action reviews (AARs) at the combat training centers so often mention that, "the TOWs never

influenced the battle?"

It is easy to visualize the TOW in the defense, but what can an Echo Company really do as part of an attacking force? Offensively, the company *fixes or suppresses* an enemy

force by attacking it by fire or from support-by-fire positions. Because of the TOW's slow rate of fire, a company commander must mass his fires to have any effect on the enemy. In fact Field Manual 7-91 (Employment of Antiarmor Platoons, Companies, and Battalions) specifies that mass is "the key to employment of a unit's antiarmor assets." But the only way a company commander can mass his fires is by concentrating his platoon fires from different locations. Although this sounds fundamental, most units in the field task TOW companies either to support by fire or to overwatch from a single position. This dysfunction results from the lack of guidance from training manuals and a general misunderstanding of Echo Company's capabilities.

To compound this misunderstanding, a recent study released by a research institution indicated a number of concerns with TOW employment. When the study focused on the offensive tasks given to TOW companies, the following statistics resulted: *In 44 battles reviewed at the National Training Center (NTC), 32% of the TF orders specified an OVERWATCH mission for the TOW company. SUPPORT-BY-FIRE was assigned 50% of the time and a screen was specified 7% of the time. The remaining 11% specified no mission for the TOW company.*

On the surface, it might seem that a company would have no difficulty with those missions. The problem is that there is no U.S. Army standard for training a company in them. ARTEP 7-91-MTP (mission training plan) lists 24 collective tasks that are suited for company execution but only one of the training and evaluation outlines (TEOs) contains a training objective that specifies engaging enemy forces.

Since the MTP and the FM clearly do not offer the company commander any specific help in fighting a company, he must turn to innovations and the available assets in planning his training. Despite the problems with the MTP and the FM, they do provide excellent guidance for training TOW platoons.

And if the platoons are trained to a high standard, fighting the company is as simple as employing the platoons in depth and controlling their fires.

During Operation DESERT SHIELD, the MTP and the accompanying drill manual served as the base in establishing the master training plan used to train TOW platoons at the NTC. The training techniques outlined here are not suggested as the only way, just as one way that works.

Individual Skills. Skill Level 1 tasks, both TOW-specific and common soldier skills, continue to serve as the foundation for all collective training at the NTC. A gunner skill test (GST) is a great technique for training the perishable skills of the antiarmor infantrymen. A GST is a series of TOW-specific skills that are common to all crew and collective tasks.

Conducting an effective GST requires numerous resources and company-level support. The tasks to be trained must be selected on the basis of the first-line supervisor's assessment of his soldiers' level of proficiency. The selection may follow a "round-robin" series of stations, in which crewmen walk through classes and ultimately acquire hands-on experience in performing all tasks. The GST culminates in a test along the lines of the Expert Infantryman's Badge (EIB). The leaders must ensure that standards remain high so that individual skills do not hinder further training.

Gunnery. TOW gunnery training places an unusual burden on an Echo Company commander. Despite its limitations, the M70 tracking board (currently the U.S. Army standard) still provides feedback to gunners and squad leaders. But the lack of an integrated/thermal sight unit forces an antiarmor infantryman to devise some ingenious training techniques.

One of these involves affixing a video camera to the top of the gunner's sight (day or night), which allows a "coach" (usually the squad leader) to view the same sight picture as the gunner. To ensure that the gunner and the coach have the same point of aim, the coach simply has the gunner sight in

on any target. The coach takes a grease pencil and draws a set of crosshairs on the accompanying video monitor, ensuring that his crosshairs match the gunner's. The coach then provides feedback to the gunner as targets are tracked. This video equipment, available through training support channels, provides a different level of feedback and improves reticle aim training.

The Bradley Unit Conduct of Fire Trainer (U-COFT) offers an innovative approach to training TOW gunners. The major difference between the Bradley and the M901 hand stations is the reversal of the "slew" and "trigger" switches. With the TOW gunner sitting in the gunner's seat of the U-COFT, TOW platoon leaders supervise the exercise from the Bradley commander's station. (This assumes that all TOW platoon leaders are Bradley qualified.) The gunners fire the first hours of the U-COFT matrix (TOW engagements) while the platoon leaders explain the simulator.

Simple tracking with MILES equipment is a proven technique and is highly encouraged for units participating in combat training center rotations. This tracking not only increases the soldiers' knowledge of MILES (both weapon and vehicle) but also reinforces good engagement skills.

Battle Drills. Battle drills introduce soldiers to teamwork, and ARTEP 7-91-Drill provides all the training objectives needed to establish a training plan. The important thing with drill training is survival, and the crew's survivability is increased when crewmen are cross-trained in their duties. Until the crews master the drills, units will not be able to progress in training.

Platoon Situational Training Exercises (STXs). STXs were used to train combat forces in preparation for Operation DESERT SHIELD. Tank, Bradley, and TOW platoons all used STXs in platoon training.

Lanes were developed using a systems approach to training (analysis, design, development, implementation, and evaluation). The first step in developing the training plan (analysis)

was to select the tasks for training. Based on the combined experience of a six-man observer-controller team, three missions were selected as the most common for TOW platoons: attack-by-fire, screen, and support-by-fire. ARTEP 7-91-MTP served as the base document for the selection of appropriate crew tasks and individual tasks. These came straight out of the collective-to-crew and individual task matrices in the MTP.

Writing the training objectives for each lane was the next phase of the STXs (design). Each lane incorporated a standard sequence using one of the three missions—*overwatch, support by fire, or screen*.

An AAR began as soon as each lane was completed. The emphasis was on teaching and coaching the fundamentals of pre-combat inspection (PCI), moving, maintaining formations, and acquiring targets. Having an aggressive opposing force (OPFOR) that could “kill” as well as “be killed” was the key in maintaining healthy levels of stress. A reconnaissance of the training site ensured that the maneuver room was adequate. All support requirements became evident during this phase, both for the OPFOR and for the training unit.

At the next stage (development), a review of all existing materials produced the lane concept. The concept behind the STX used a simple *crawl, walk, run* approach. Each lane introduced a platoon leader to a tactical situation through an operations order and a terrain model. The platoon leaders conducted troop leading procedures and gave their orders using a sand table. A backbrief immediately followed in which squad leaders literally crawled on the sand table with “toy” models. The leaders’ discussion focused on movement formations and techniques as well as on an understanding of the platoon leader’s concept.

Once the soldiers felt comfortable with the mission, the entire platoon rehearsed the operation without their vehicles. This *walk* phase gave drivers, loaders, and gunners an appreciation for their upcoming mission. The platoon

leader, satisfied with their performance here, informed his observer controller that he wanted to *run* the lane. Platoons that immediately showed major problems had to get off the lane, but those that had only minor problems were allowed to continue.

Validation, which became the litmus test for the proposed program, required an antitank platoon to go through all sequences of the lane. For validation, the lane must have enough maneuver space, fields of fire, and realism.

In the actual training (implementation), units executed the lane concept within a scenario that specified one of the three missions—attack-by-fire, screen, support-by-fire. Multiple repetitions of each lane ensured a high level of proficiency in all performance measures and brought out any individual or crew weaknesses.

The observer-controllers focused most of their coaching on PCI, movement, and target acquisition. Leader training ensured that all of the lessons learned were disseminated. The intent of this training was to give the leaders a block of instruction on a lane they would train on the next day. Leader training began the night before and allowed leaders a chance to practice the *crawl* portion of the lane. This reinforced their troop leading skills and allowed the leaders to appear “squared away” in front of their subordinates the next day.

Company Field Training Exercise (FTX). If the company in training is proficient in the individual skills, the execution of these events takes seven days (one for the GST, two for crew-drill competition, three for STXs, and one for retesting). Individual skills should be strongly emphasized.

The company commander, having completed the fundamentals, must now seek help and support in continuing his training progression. This assistance and support must come from his battalion or sister units. Again, the systems approach to planning works best, and an opposing force composed of tanks and infantry fighting vehicles is essential. The scenarios used should replicate task force offensive operations

that require Echo Company to conduct one of the same three missions—attack-by-fire, screen, and support-by-fire.

To conduct an accurate estimate of the situation, the company commander must have an operations order with overlay, an indirect fire plan, and an enemy situational template. The task force staff and commander receive training on Echo Company’s capabilities while they are involved in supporting the company’s training.

To attain mass, the battalion orders need to stress the following portions of the battlefield operating systems:

- Intelligence—location, type, composition, and estimated strength of the “targeted” enemy, and the ranges of all enemy weapon systems.
- Maneuver—scheme to attain firing positions.
- Fire Support—fires dedicated to Echo Company in attaining firing positions. (If we think a position is a good place to support from, the enemy probably has the same idea. An artillery preparation should be fired on all positions before they are occupied. The intent of fires is to destroy enemy vehicles and dismounted soldiers.)
- Air Defense—a man-portable air defense system (MANPADS) should be dedicated to support the force.
- Maneuver, Countermaneuver, and Survivability—the extent of survivability the existing terrain affords; the chances of encountering chemical agents.
- Combat Service Support—ammunition resupply and casualty evacuation considerations.
- Command and Control—graphic control measures that facilitate a 360-degree orientation during movement and engagement of the enemy.

The fundamentals of antiarmor employment (as stated in FM 7-91, Chapter 2) give a commander a blueprint for using his platoons. Covered and concealed positions increase the survivability of the platoons. During map and actual reconnaissances, commanders identify these places. Graphic control measures provide the commander with the tools to designate such positions as they

become apparent during movement. Commanders gain depth through initial positioning, movement techniques (traveling, traveling overwatch, bounding overwatch), and disengagement criteria.

The maneuvering platoons also gain enough depth to engage an enemy force from several directions. Templating the enemy's direct and indirect fire ranges gives the commander a gauge he can use to assess the risk in maintaining his depth. Flank shots result from fixing the enemy from one direction in an effort to turn his flank to the main effort. Mutual support exists within the company by platoons as well as within the zone of action with other companies. Cross-talk on the battalion command net eases this process.

Standoff provides more survivability, but if a unit templates its enemy and understands the range and the effect of his weapons, it can make the most of standoff by fighting outside the enemy's direct-fire envelope. All-around security is paramount to the supporting force. If a unit must fix an enemy force while its assault forces close on the enemy, it must also take the appropriate means of providing continuous fires.

The U.S. Army needs a dedicated support system to fight offensively, and the Echo Company can fill that role. It has the means by which to gain an initial advantage over the enemy (maneuver). Its long-range accurate fires, when focused on the enemy, are capable of inflicting substantial

destruction (firepower). A task force commander, by dedicating the combat multipliers to the TOW company, ensures that his support force is a credible one (protection). Bringing it all together is the responsibility of the Echo Company commander (leadership).

Innovation, and the use of all available assets, will help increase the effectiveness of our antiarmor companies.

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SWAP SHOP



Infrared LED Light

As light infantrymen, we conduct most of our operations at night and often use chemical lights as control measures. Although these lights work well, they have some disadvantages: They are expensive (about \$3.00 each); they don't last long (about three hours for an infrared light); and sometimes they don't work at all.

I wanted to find something I could use as an alternative, but I also wanted it to last longer and be reusable. After a little trial and error, I found that a small infrared light emitting diode (LED) did the job quite well. It was also inexpensive and practically indestructible. (The diodes come in several different colors in addition to the infrared.)

Because I wanted the light to work with a regular nine-volt battery (BA-3290), I had to add a 470-ohm, $\frac{1}{2}$ -watt resistor. The light, the resistor, and a nine-volt battery connector can be purchased at any electronics store for

about \$2.50.

To make this light, first strip the insulation from the leads on the battery connector. Then wrap one of the leads around one end of the resistor. Connect the other lead to one of the diode's tails and complete the circuit by connecting the other tail to the other end of the resistor. Soldering the connections is not necessary; the glue from a hot glue gun will hold everything in place and waterproof the light as well.

I have tested the lights for more than 48 hours of continuous burning before the battery finally gave out. The lights themselves will last almost forever without burning out. The diode is as bright as a chemical light but smaller, which decreases the chances of enemy detection.

My platoon found these lights very useful during a recent ARTEP.

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